Textbook

Mathematics

3

Test Edition

Based on Single National Curriculum 2020

حکومت بلوچستان کا پروگرام "معیاری تعلیم سب کے لیے"

Balochistan Textbook Board, Quetta

Content

Data Handling

By the end of this unit, you will be able to:

- Representation of data by
  - Carroll diagram
  - Tally chart
- Read and interpret a Carroll diagram and Tally chart
- Read and interpret Picture Graph

How can show the number of birds by a diagram?

Carroll Diagram

I want to sort out different things with help of Carroll diagram. What should 1 do for this?

You can sort according to the colour and shapes

	Shirts	Caps
Blue colour	Shirts in blue colour	Caps in blue colour
Not blue colour	Shirts not in blue colour	Caps not in blue colour

Carroll diagram is a diagram in which different things are sorted according to two characteristics. Figures, numbers and different things can be sorted out using Carroll diagram.

In above Carroll diagram, we can observe that:

- three shirts are in blue colour
- three caps are in blue colour
- three shirts are not in blue colour
- four caps are not in blue colour

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Sort out the given numbers by Carroll diagram

3, 8, 10, 12, 16, 18, 21, 25, 28, 33

On the basis of which two characteristics, can we sort these numbers?

We can use the size of the number for sorting. less than 15 and greater than 15. Similarly, the numbers divisible by 4 and not divisible by 4

Numbers less than 15 and divisible by 4

Numbers greater than 15 and divisible by 4

	Numbers less than 15	Numbers greater than 15
Numbers divisible by 4	8, 12	16, 28
Numbers not divisible by 4	3, 10	18, 21, 25, 33

Numbers less than 15 and not divisible by 4

Numbers greater than 15 and not divisible by 4

In the Carroll diagram, we can observe that:

- Numbers less than 15 and divisible by multiplication table of 4 are 8, 12.
- Numbers greater than 15 and divisible by multiplication table of 4 are 16, 28
- Numbers less than 15 and not divisible by multiplication table of 4 are 3, 10
- Numbers greater than 15 and not divisible by multiplication table 4 are 13, 21, 25 33

Tally Chart

In a Maths test, the marks obtained by

34 students in a primary class are

8	8	6	4	9	6	9	8	7	8
8	4	6	8	9	6	7	7	8	8
6	9	8	8	7	4	9	9	9	6
7	4	4	4						

let's prepare a Tally Chart using given data.

Marks Obtained	Tally Marks	Number of Students
8	‖‖‖///	
6	‖‖/	
7	‖‖///	
9	‖‖////	
4	////	

(Key Point)

Marks (/) in Tally column are equal to the numbers of observations in the data.

Answer the following questions by interpreting the Carroll diagram.

	Even Numbers	Odd Numbers
Numbers divisible by 5	10, 20, 30	5, 15, 25
Numbers not divisible by 5	4, 8, 14	3, 9, 19, 21

i)   What is the smallest even number which is divisible by 5?

ii) What are the odd numbers which are divisible by 5?

iii) What is the smallest even numbers which is not divisible by 5?

iv) What is the greatest odd numbers which is not divisible by 5?

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Using Tally Chart, answer the questions given below.

Animals	Tally marks
Monkey	ЦЦ//
Lion	ЦЦ/
Bear	////
Zebra	ЦЦ/
Elephant	//

i) Which animal is least in numbers?   Elephant

ii) Which animal is greatest in number?

iii) Which of the two animals are equal in number?

iv) What is the total number of monkey and lion?

v) What is the total number of animals?

Exercise 1

1 Show the following fruits and vegetables by Carroll diagram

2 Complete the Carroll diagram using the given numbers

10, 18, 22, 25, 29, 30, 35, 37, 45, 43, 48, 52

	Even numbers	Odd numbers
Numbers divisible by 5		
Numbers not divisible by 5		

3 Observe the Carroll diagram and answer the questions given below.

	Numbers less than 25	Numbers greater than 25
Numbers divisible by 7	7, 14, 21	28, 35, 42
Numbers not divisible by 7	5, 9, 15, 19	27, 29, 38, 43

i) Find the numbers greater than 25 and divisible by 7

ii) Find the numbers greater than 25 and not divisible by 7

iii) Find the numbers less than 25 and divisible by 7

iv) Find the numbers less than 25 and not divisible by 7

4 ► A dice is rolled 20 times and the following numbers are obtained.

1, 3, 5, 6, 3, 2, 4, 5, 3, 2, 4,6, 3, 4, 3, 4,2, 5, 1, 6
Using above numbers, prepare a Tally Chart

5 ► In a school, following number of students celebrate their birthday in different months.
Answer the question given below in the table.

Month	Tally marks
January	///
February	/
March	
April	//
May	////

i) In which month least number of students celebrate the birthday?

ii) In which month greatest number of students celebrate the birthday?

iii) In January and April, how many students celebrate their birthday?

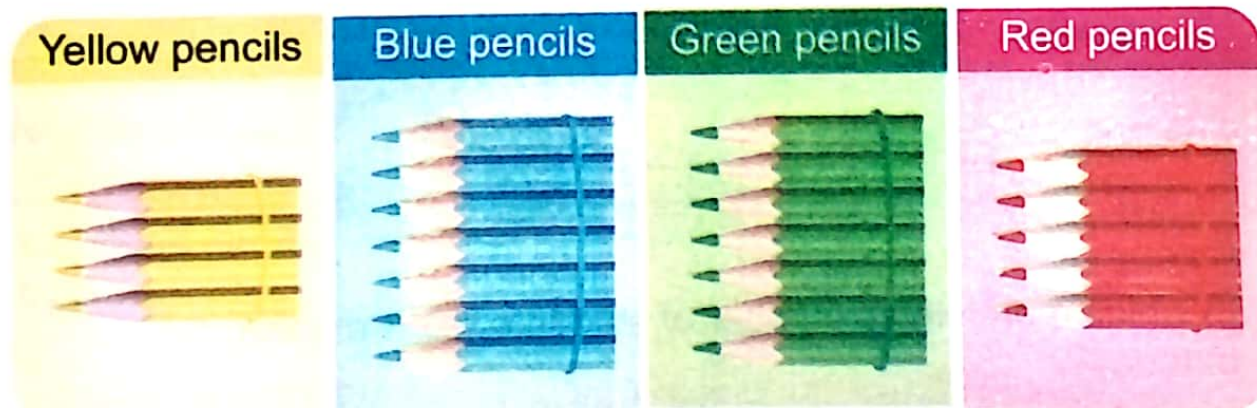iv) How many total number of students celebrate their birthday in 5 months?

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Picture Graph

I want to arrange pencils according to their colours.

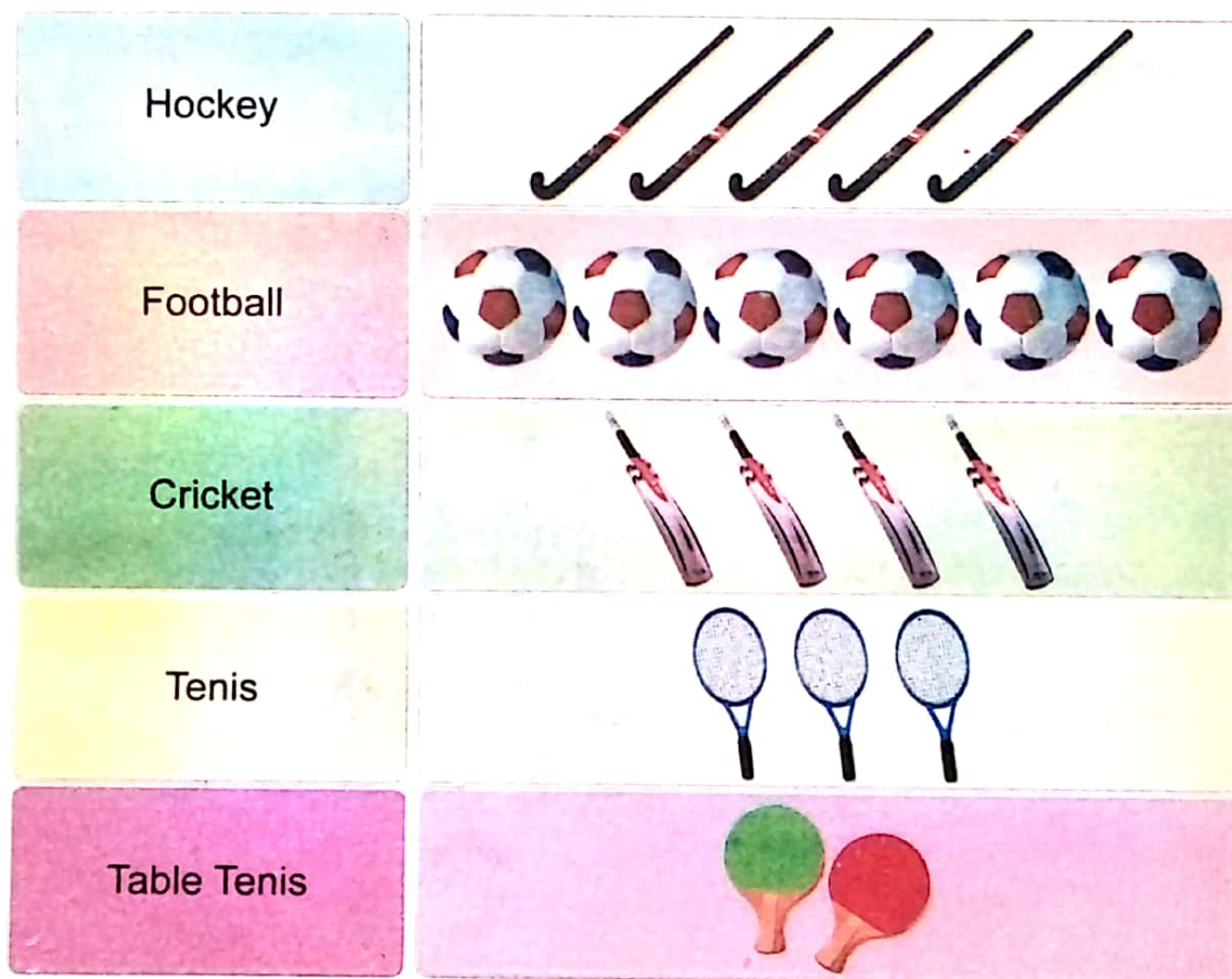We can arrange these pencils using picture graph

Yellow pencils	Blue pencils	Green pencils	Red pencils

In this picture graph:

i) There are 4 yellow pencils.

ii) There are 7 blue pencils.

iii) There are 7 green pencils.

iv) There are 5 red pencils.

Given in the following picture graph, favourite sports of students are shown.

1 picture = 2 students

Hockey	
Football	
Cricket	
Tenis	
Table Tenis	

Observe the above picture graph and answer the following questions

i) What is the number of students playing hockey?

ii) What is the number of students playing cricket?

iii) Which is the most favourite sport?

iv) Which is the least favourite soprt?

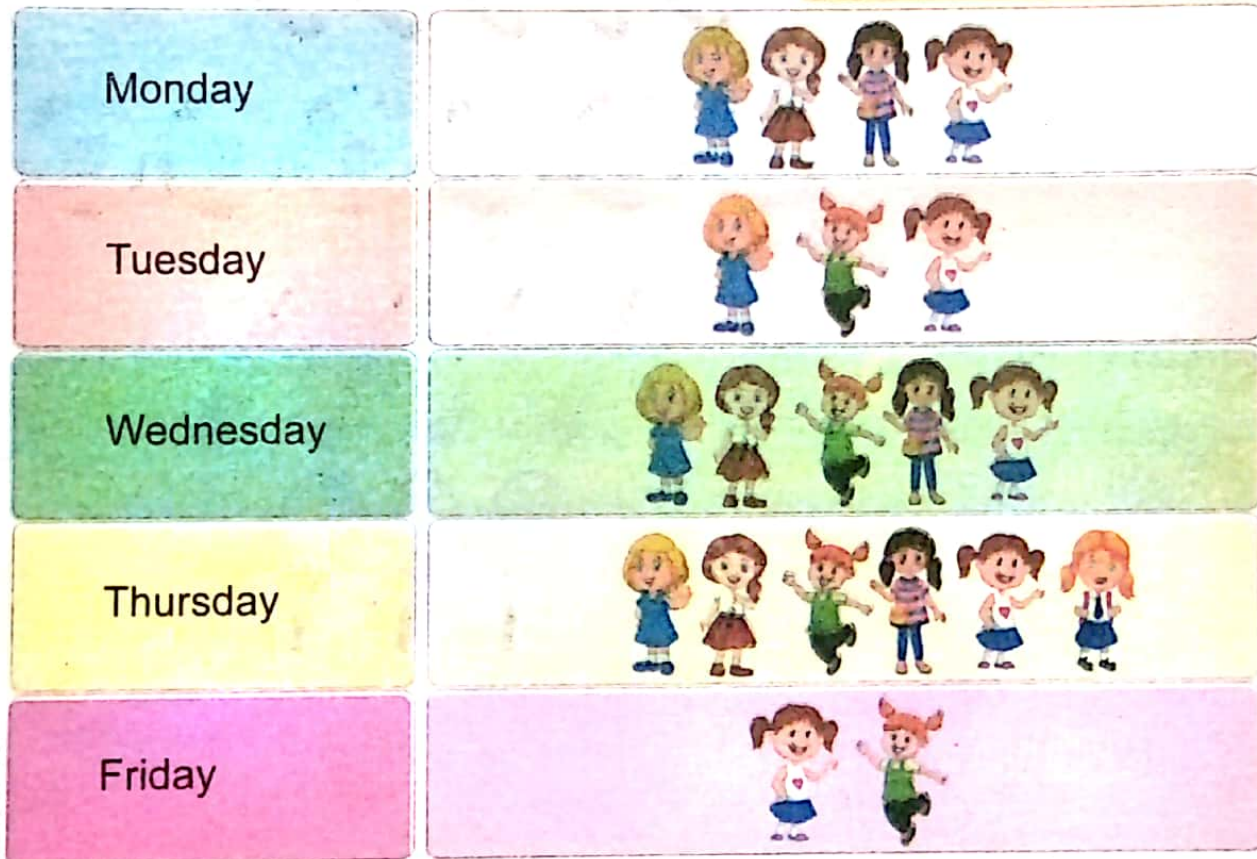v) What is the number of students playing tenis?

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1 Following picture graph, the number of students were absent during a week.

1 picture = 1 student

Monday	
Tuesday	
Wednesday	
Thursday	
Friday	

Observe the above graph and answer the following questions.

i) How many students were absent on Monday?

ii) How many students were absent on Tuesday?

iii) On what day most number of the students were absent?

iv) On what day, least number of students were absent?

v) What is the total number of students absent on Wednesday and Thursday?

② The following picture graph shows the production of cars in different years.

1 picture = 100 cars

Year	Number of cars
2008	
2009	
2010	
2011	
2012	

Observe the graph and answer the following questions.

i) How many cars were manufactured in 2008?

ii) How many cars were manufactured in 2010?

iii) In which year, most number of cars were manufactured?

vi) In which year, least number of cars were manufactured?

v) In which two years, equal number of cars were manufactured?

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I Have Learnt

- In Carroll diagram, different things are sorted out due to its two characteristics.

- Figures, numbers and different things are sorted out in Carroll diagram.

- In Tally chart data is collected and organized by tally marks.

- In picture graph, different things are shown in different boxes.

Vocabulary

Carroll Diagram
Tally Chart
Picture Graph
Characteristics

Review Exeercise

1. Prepare Carroll diagram from the given data.

12, 15, 16, 18, 17, 19, 21, 23, 28, 30, 32, 37, 39

	Even numbers	Odd numbers
Numbers less than 20		
Numbers greater than 20		

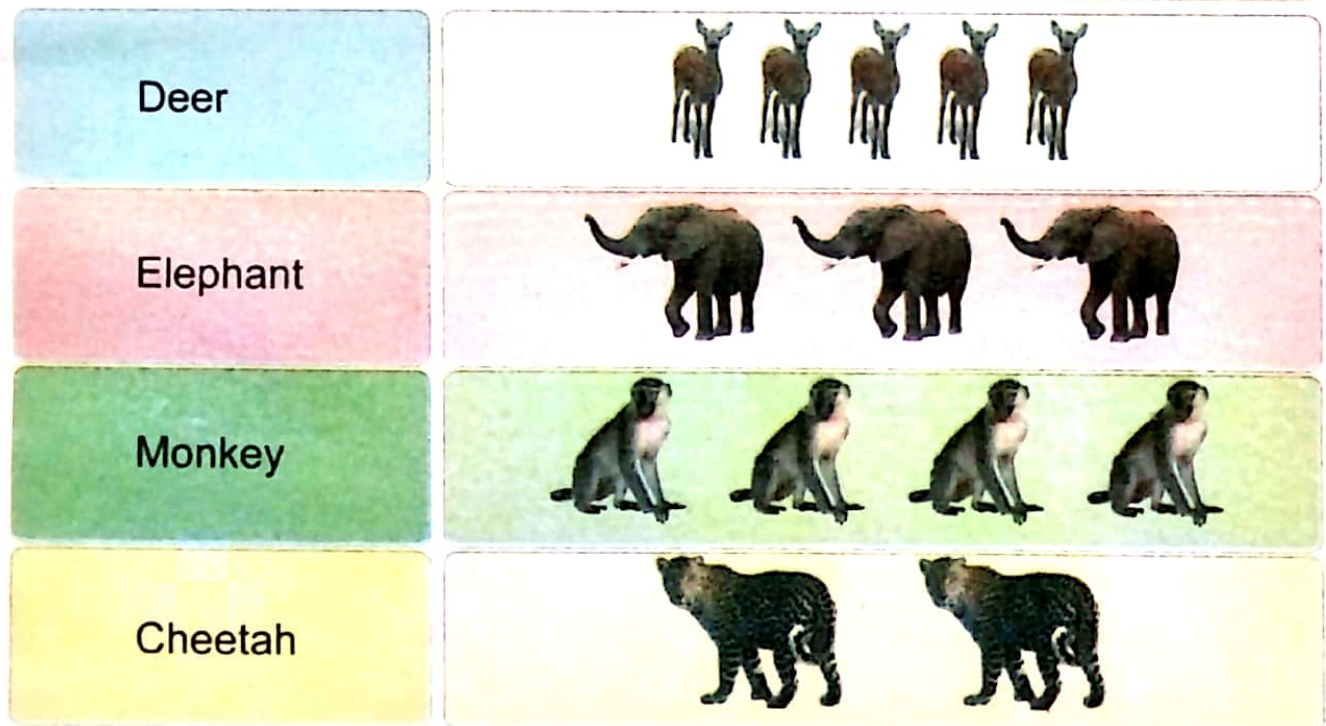**2.** The following Tally chart shows the favourite subject of students in a school. Answer the following question.

Subjects	Tally marks
Urdu	卅 //
Science	卅 ///
English	卅 卅
Mathematics	卅 /
General Knowledge	////

i)   Which subject is the least favourite?

ii) Which subject is the most favourite?

iii) How much students like Science?

iv) How much students like Urdu?

v)   How many students like Mathematics?

3 A answer the question, below using the picture graph.

1 picture = 2 animals

Deer	
Elephant	
Monkey	
Cheetah	

i)   Which animal is greatest in number?

ii) Which animal is least in number?

iii) What is the total number of elephants and monkeys?

iv) What is the total number of all animals?

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